

CLAIMS

1. A shaft sealing arrangement for sealing bores around stirrer shafts of interest that emerge through walls of associated mixing vessels comprising:

- 5           (a) a pair of generally cylindrical shaft sealing assemblies designed to be associated with a pair of adjacent spaced generally parallel stirrer shafts of interest, each said gland assembly includes a gland member and a gland housing, said gland member having an outside surface and an axis and including a plurality of raised spaced radially distributed wiper strips attached to said outside surface, said wiper strips being directionally deployed at an angle with the direction of the axis of said gland such that the wiper strips act to return escaping material back into an associated mixing vessel when said gland is rotated in a desired direction;
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- 20           (b) wherein in each said gland assembly is adapted to be mounted on to rotate with a corresponding one of said pair of stirrer shafts of interest and is enabled to move axially relative thereto; and
- 25           (c) a seal drive system for operating said pair of gland assemblies along said pair of shafts of interest between a deployed position wherein each said sealing gland is positioned in a bore through which a corresponding stirrer shaft emerges and in a retracted position wherein said gland assembly is withdrawn outside said bore.
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2. A shaft sealing arrangement as in claim 1 further comprising a clamp device associated with each

said gland assembly adapted to clamp onto a corresponding stirring shaft and cooperate with said gland assembly, said clamp device allowing movement of said gland assembly along said shaft but preventing relative rotation between said gland assembly and said shaft.

3. A shaft sealing arrangement as in claim 1 wherein said drive system comprises a linear actuator which operates both said gland assemblies by means of a common bridging member.

4. A shaft sealing arrangement as in claim 3 wherein said common bridging member is a pusher plate disposed to interlock with and reciprocate both of said pair of gland assemblies.

5. A shaft sealing arrangement as in claim 2 wherein said drive system comprises a linear actuator which operates both said gland assemblies by means of a common bridging member.

6. A shaft sealing arrangement as in claim 5 wherein said common bridging member is a pusher plate disposed to interlock with and reciprocate both of said pair of gland assemblies.

7. A shaft sealing arrangement as in claim 3 wherein said linear operator is a double-acting fluid-operated cylinder fixed to said common bridging member and having an associated reciprocating rod adapted to be fixed to a wall of a vessel through which said stirrer shafts of interest emerge in a manner such that extension and retraction of said cylinder rod moves said common bridging member away from and toward said wall thereby respectively retracting and deploying said gland assemblies.

8. A shaft sealing arrangement as in claim 7 wherein said fluid-operated cylinder is an air cylinder.

9. A shaft sealing arrangement as in claim 5

wherein said linear operator is a double-acting fluid-operated cylinder fixed to said common bridging member and having an associated reciprocating rod adapted to be fixed to a wall of a vessel through which said stirrer shafts of interest emerge in a manner such that extension and retraction of said cylinder rod moves said common bridging member away from and toward said wall thereby respectively retracting and deploying said gland assemblies.

10           10. A shaft sealing arrangement as in claim 9 wherein said fluid-operated cylinder is an air cylinder.

11. A shaft sealing arrangement as in claim 1 wherein said gland members and said gland housings are assembled from symmetrical halves, with said gland member being captured by said housing in a dovetail arrangement.

12. A shaft sealing arrangement as in claim 2 wherein said gland members and said gland housings are assembled from symmetrical halves, with said gland member being captured by said housing in a dovetail arrangement.

20           13. A shaft sealing gland assembly for sealing bores around stirrer shafts of interest that emerge through walls of associated mixing vessels comprising:

- (a) a generally cylindrical shaft sealing gland member having an outside surface and an axis and including a plurality of raised spaced radially distributed wiper strips attached to said outside surface of said sealing gland, said wiper strips being directionally deployed at an angle with the direction of the axis of said gland such that the wiper strips act to urge return of escaping material back into an associated mixing vessel when said sealing gland is deployed and rotated in the desired direction; and

- (b) a generally cylindrical gland housing associated with said gland capturing one end of said gland in a dovetail arrangement.

5        14. A sealing gland assembly as in claim 12 wherein said gland and said gland housing are assembled from symmetrical halves.